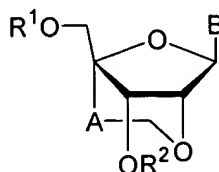


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (currently amended) A compound of formula (1):



(1)

wherein:

R¹ and R² are the same or different and are selected from the group consisting of hydrogen atoms, hydroxyl protecting groups, phosphate groups, protected phosphate groups and a group of formula -P(R³)R⁴, wherein R³ and R⁴ are the same or different and are selected from the group consisting of hydroxyl groups, protected hydroxyl groups, mercapto groups, protected mercapto groups, amino groups, alkoxy groups having from 1 to 4 carbon atoms, alkylthio groups having from 1 to 4 carbon atoms, cyanoalkoxy groups having from 1 to 5 carbon atoms and amino groups substituted by an alkyl group having from 1 to 4 carbon atoms;

A represents ~~an alkylene~~ a methylene group ~~having from 1 to 4 carbon atoms~~; and

B is selected from the group consisting of unsubstituted purin-9-yl groups, unsubstituted 2-oxo-pyrimidin-1-yl groups, and substituted purin-9-yl groups and substituted 2-oxo-pyrimidin-1-yl groups having at least one substituent α selected from the group consisting of hydroxyl groups, protected hydroxyl groups, alkoxy groups having from 1 to 4 carbon atoms, mercapto groups, protected mercapto groups, alkylthio groups having from 1 to 4 carbon atoms, amino groups, protected amino groups, amino groups substituted by an alkyl group having from 1 to 4 carbon atoms, alkyl groups having from 1 to 4 carbon atoms and halogen atoms; or a salt thereof.

Claim 2. (original) The compound according to Claim 1 or a salt thereof, wherein R^1 is selected from the group consisting of hydrogen atoms, aliphatic acyl groups, aromatic acyl groups, methyl groups substituted by from 1 to 3 aryl groups, methyl groups substituted by from 1 to 3 aryl groups the aryl ring of which is substituted by a substituent selected from the group consisting of lower alkyl, lower alkoxy, halogen and cyano groups, and silyl groups.

Claim 3. (original) The compound according to Claim 1 or a salt thereof, wherein R^1 is selected from the group consisting of hydrogen atoms, acetyl groups, benzoyl groups, benzyl groups, p-

methoxybenzyl groups, dimethoxytrityl groups, mono-methoxytrityl groups and tert-butyldiphenylsilyl groups.

Claim 4. (original) The compound according to Claim 1 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, aliphatic acyl groups, aromatic acyl groups, methyl groups substituted by from 1 to 3 aryl groups, methyl groups substituted by from 1 to 3 aryl groups the aryl ring of which is substituted by a substituent selected from the group consisting of lower alkyl, lower alkoxy, halogen and cyano groups, silyl groups, phosphoramidite groups, phosphonyl groups, phosphate groups and protected phosphate groups.

Claim 5. (original) The compound according to Claim 2 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, aliphatic acyl groups, aromatic acyl groups, methyl groups substituted by from 1 to 3 aryl groups, methyl groups substituted by from 1 to 3 aryl groups the aryl ring of which is substituted by a substituent selected from the group consisting of lower alkyl, lower alkoxy, halogen and cyano groups, silyl groups, phosphoramidite groups, phosphonyl groups, phosphate groups and protected phosphate groups.

Claim 6. (original) The compound according to Claim 3 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, aliphatic acyl groups, aromatic acyl groups,

methyl groups substituted by from 1 to 3 aryl groups, methyl groups substituted by from 1 to 3 aryl groups the aryl ring of which is substituted by a substituent selected from the group consisting of lower alkyl, lower alkoxy, halogen and cyano groups, silyl groups, phosphoramidite groups, phosphonyl groups, phosphate groups and protected phosphate groups.

Claim 7. (original) The compound according to Claim 1 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, acetyl groups, benzoyl groups, benzyl groups, p-methoxybenzyl groups, tert-butyldiphenylsilyl groups, $-P(OC_2H_4CN)(NCH(CH_3)_2)$, $-P(OCH_3)(NCH(CH_3)_2)$, phosphonyl groups, 2-chlorophenyl phosphate groups and 4-chlorophenyl phosphate groups.

Claim 8. (original) The compound according to Claim 2 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, acetyl groups, benzoyl groups, benzyl groups, p-methoxybenzyl groups, tert-butyldiphenylsilyl groups, $-P(OC_2H_4CN)(NCH(CH_3)_2)$, $-P(OCH_3)(NCH(CH_3)_2)$, phosphonyl groups, 2-chlorophenyl phosphate groups and 4-chlorophenyl phosphate groups.

Claim 9. (original) The compound according to Claim 3 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, acetyl groups, benzoyl groups, benzyl groups,

p-methoxybenzyl groups, tert-butyldiphenylsilyl group, $-P(OC_2H_4CN)(NCH(CH_3)_2)$, $-P(OCH_3)(NCH(CH_3)_2)$, phosphonyl groups, 2-chlorophenyl phosphate groups and 4-chlorophenyl phosphate groups.

Claim 10. (canceled)

Claim 11. (canceled)

Claim 12. (canceled)

Claim 13. (canceled)

Claim 14. (canceled)

Claim 15. (canceled)

Claim 16. (canceled)

Claim 17. (canceled)

Claim 18. (canceled)

Claim 19. (previously presented) The compound according to Claim 1 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl, 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group

of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloropyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl, 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxopyrimidin-1-yl group and 4-amino-5-methyl-2-oxopyrimidin-1-yl group, the amino group of which is protected.

Claim 20. (previously presented) The compound according to Claim 2 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-

yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 21. (previously presented) The compound according to Claim 3 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino

group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl groups, the amino group of which is protected.

Claim 22. (previously presented) The compound according to Claim 4 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-

methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 23. (previously presented) The compound according to Claim 5 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 24. (previously presented) The compound according to Claim 6 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercaptopyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 25. (previously presented) The compound according to Claim 7 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino

group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloropyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 26. (previously presented) The compound according to Claim 8 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-

fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 27. (previously presented) The compound according to Claim 9 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-

hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 28. (canceled)

Claim 29. (canceled)

Claim 30. (canceled)

Claim 31. (canceled)

Claim 32. (canceled)

Claim 33. (canceled)

Claim 34. (canceled)

Claim 35. (canceled)

Claim 36. (canceled)

Claim 37. (original) The compound according to Claim 1 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 38. (original) The compound according to Claim 2 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 39. (original) The compound according to Claim 3 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 40. (original) The compound according to Claim 4 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl,

cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 41. (original) The compound according to Claim 5 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeniny, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaniny, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 42. (original) The compound according to Claim 6 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeniny, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaniny, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 43. (original) The compound according to Claim 7 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeniny, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaniny, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 44. (original) The compound according to Claim 8 or a salt thereof, wherein B is selected from the group consisting

of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uracinyl and thyminyl groups.

Claim 45. (original) The compound according to Claim 9 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uracinyl and thyminyl groups.

Claim 46. (canceled)

Claim 47. (canceled)

Claim 48. (canceled)

Claim 49. (canceled)

Claim 50. (canceled)

Claim 51. (canceled)

Claim 52. (canceled)

Claim 53. (canceled)

Claim 54. (canceled)

Claim 55. (original) A compound or a salt thereof selected from the group consisting of
2'-O,4'-C-ethyleneguanosine,
2'-O,4'-C-ethyleneadenosine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylene-6-N-benzoyladenine,

3',5'-di-O-benzyl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-6-N-benzoyladenosine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine,
2'-O,4'-C-ethylene-2-N-isobutyrylguanosine,
2'-O,4'-C-ethylene-6-N-benzoyladenosine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-6-N-benzoyladenosine-3'-
O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine-
3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite,
2'-O,4'-C-ethylenuridine,
2'-O,4'-C-ethylene-5-methyluridine,
2'-O,4'-C-ethylenecytidine,
2'-O,4'-C-ethylene-5-methylcytidine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylenuridine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylenuridine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylene-5-methyluridine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-5-methyluridine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylene-4-N-benzoylcytidine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoylcytidine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylene-4-N-benzoyl-5-
methylcytidine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoyl-5-
methylcytidine,
2'-O,4'-C-ethylene-4-N-benzoylcytidine,
2'-O,4'-C-ethylene-4-N-benzoyl-5-methylcytidine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-uridine-3'-O-(2-
cyanoethyl N,N-diisopropyl)phosphoramidite,

5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-5-methyluridine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoylcytidine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite, and
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoyl-5-methylcytidine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite.

Claim 56. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-5-methyluridine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite or a salt thereof.

Claim 57. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-6-N-benzoyladenosine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite or a salt thereof.

Claim 58. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite or a salt thereof.

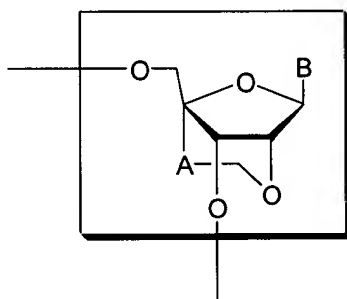
Claim 59. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-uridine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite or a salt thereof.

Claim 60. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoylcytidine-3'-O-(2-cyanoethyl N,N-

diisopropyl)phosphoramidite or a salt thereof.

Claim 61. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoyl-5-methylcytidine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite or a salt thereof.

Claim 62. (currently amended) An oligonucleotide analogue comprising two or more nucleoside units wherein at least one of said nucleoside units is a structure of the formula (2):



(2)

wherein:

A represents ~~an alkylene~~ a methylene group ~~having from 1 to 4 carbon atoms~~; and

B is selected from the group consisting of an unsubstituted purin-9-yl group, an unsubstituted 2-oxo-pyrimidin-1-yl group, a purin-9-yl group substituted with at least one substituent α and a 2-oxo-pyrimidin-1-yl group substituted with at least one substituent α , said substituent α being selected from the group consisting of an unprotected hydroxyl group, a protected hydroxyl

group, an alkoxy group having from 1 to 4 carbon atoms, an unprotected mercapto group, a protected mercapto group, an alkylthio group having from 1 to 4 carbon atoms, an unprotected amino group, a protected amino group, an amino group substituted by an alkyl group having from 1 to 4 carbon atoms, an alkyl group having from 1 to 4 carbon atoms and a halogen atom; or a salt thereof.

Claim 63. (original) The oligonucleotide analogue according to claim 62 or a salt thereof, which comprises up to 100 nucleoside units and wherein nucleoside units are bonded to each other through a phosphodiester bond or a phosphorothioate bond.

Claim 64. (original) The oligonucleotide analogue according to claim 62 or a salt thereof which comprises 2 to 50 nucleoside units; and when said oligonucleotide analogue contains two or more nucleoside units of the structure of said formula (2), said nucleoside units of the structure of formula (2) are the same or different, and wherein said salt is a pharmaceutically acceptable salt.

Claim 65. (original) The oligonucleotide analogue according to claim 64 or a salt thereof which comprises 10 to 30 nucleoside units.

Claim 66. (original) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein said nucleoside units are bonded to each other through a phosphoric acid diester bond or a phosphorothioate bond.

Claim 67. (canceled)

Claim 68. (currently amended) The oligonucleotide analogue according to Claim 62 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected[[,]] ; 2,6-diamino-purin-9-yl; 2-amino-6-chloropurin-9-yl, 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino

group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloro-purin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

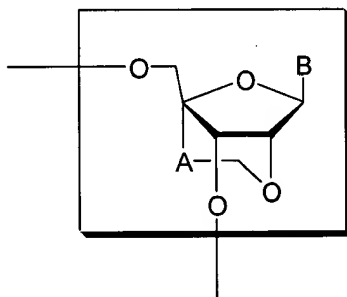
Claim 69. (canceled)

Claim 70. (currently amended) The oligonucleotide analogue according to Claim 62 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-

benzoylamino-~~pyridin-~~ pyrimidin 1-yl, 5-methylcytosinyl, uraciny1 and thyminy1 groups.

Claim 71. (canceled)

Claim 72. (currently amended) A pharmaceutical composition comprising a pharmaceutically effective amount of a pharmacologically active compound together with a carrier therefor, wherein said pharmacologically active compound is an oligonucleotide analogue comprising two or more nucleoside units, wherein at least one of said nucleoside units is a structure of the formula (2):



(2)

wherein:

A represents ~~an alkylene~~ a methylene group ~~having from 1 to 4~~
~~carbon atoms~~; and

B is selected from the group consisting of an unsubstituted purin-9-yl group, an unsubstituted 2-oxo-pyrimidin-1-yl group, a purin-9-yl group substituted with at least one substituent α and a 2-oxo-pyrimidin-1-yl group substituted with at least one substituent α , said substituent α being selected from the group consisting of an unprotected hydroxyl group, a protected hydroxyl group, an alkoxy group having from 1 to 4 carbon atoms, an unprotected mercapto group, a protected mercapto group, an alkylthio group having from 1 to 4 carbon atoms, an unprotected amino group, a protected amino group, an amino group substituted by an alkyl group having from 1 to 4 carbon atoms, an alkyl group having from 1 to 4 carbon atoms and a halogen atom; or a pharmacologically acceptable salt thereof.

Claim 73. (canceled)

Claim 74. (previously presented) A pharmaceutical composition according to Claim 72, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diamino-purin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-

amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl, 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloro-purin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercaptopyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 75. (canceled)

Claim 76 (currently amended) A pharmaceutical composition according to Claim 72, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-

benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-~~pyridin~~-pyrimidin 1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claims 77 to 102. (canceled)

Claim 103. (new) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-6-N-benzoyladenosine or a salt thereof.

Claim 104. (new) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine or a salt thereof.

Claim 105. (new) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethyleneuridine or a salt thereof.

Claim 106. (new) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-5-methyluridine or a salt thereof.

Claim 107. (new) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoylcytidine or a salt thereof.

Claim 108. (new) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoyl-5-methylcytidine or a salt thereof.

Claim 109. (new) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a 6-benzoylamino-purin-9-yl group.

Claim 110. (new) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a 2-isobutyrylamino-6-hydroxypurin-9-yl group.

Claim 111. (new) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a uraciny1 group.

Claim 112. (new) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl group.

Claim 113. (new) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a 2-oxo-4-benzoylamino-pyrimidin-1-yl group.

Appl. No. 09/925,673

Claim 114. (new) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl group.